

## Monitoring Voice over IP

***This application note gives an overview of benefits using op5 Monitor to monitor and secure quality on Voice over Packet systems.***

### From trial to real time system

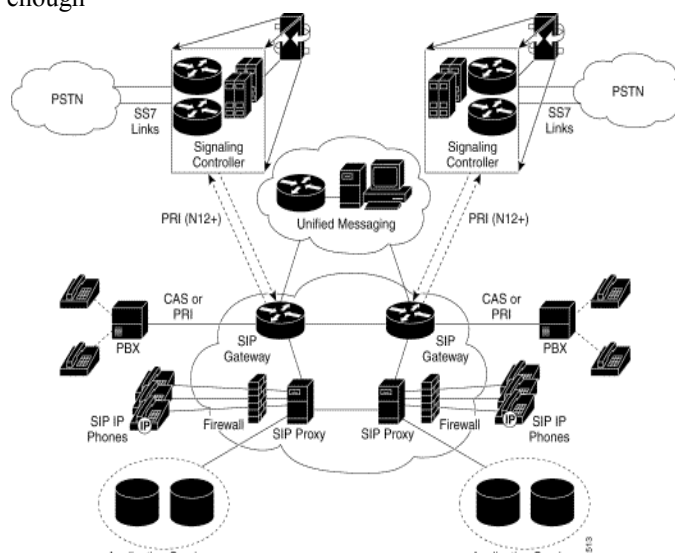
Packet based Voice or more commonly used VoIP is now definitely going from small trial systems to large scale implementations across all types of organizations. This is great as it brings a whole new set of useful business tools and integrations for new types of internal and external applications.

### VoIP – a new challenge for system monitoring in real time

A generic network and application map of a VoIP system is enough to realize the complexity of the packet based voice. The first and most important issue to deal with is just the pure fact that the whole function VoIP is depending on multiple of devices/systems all working 100% together. A small issue on a switch or an underperforming database is all that is needed to create a problem on the voice function.

A key to successful VoIP - especially during the initial phase of a VoIP system - is to quickly see and understand exactly where and what kind of error is creating the problem. As the whole system is depending on so many devices, applications and traffic flows it is imperative to see the whole VoIP system on one screen so that the support organization can react and act on the actual error and not waste resources on the symptoms.

Source: Cisco



### op5 Monitor – a generic Network Management solution with specific VoIP vendor features

[op5 Monitor](#) will give you the initial overview needed to collect and monitor all the different parts of your VoIP system. By utilizing features such as service groups, traffic flows, application flows, Web based connection to vendor device managers and Quality of service analysis.

### Service Groups

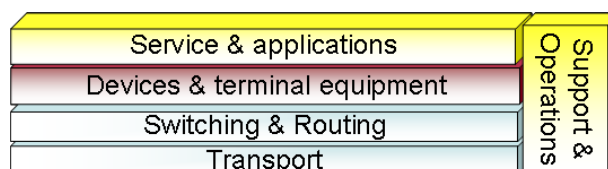
This enables you to group specific hardware and software checks in to a single group and thereby see the whole system in “one green lamp”. If there is a problem in the group, i.e. something has gone wrong or is about to, you will directly see what it is and how it may affect your service.

## Traffic flows

Even before going in to detailed quality of service analysis any abnormal change in vital IP traffic flows involved in between sites or on local LAN switch port connected to a server raises an alarm.

## Application flows

Round trip or latency in application responses (i.e. database queries etc) is set and monitored so that growing potential problems can be addressed before they create a full system failure



## Web based connection to vendor device managers

op5 believes that the individual vendors such as Cisco, Avaya, 3Com etc. all have excellent device managers giving very detailed and granule data on the actual VoIP central server. We simply integrate these device managers on three levels:

- Direct web access from the user interface and overview in OP5 Monitor.
- Alarm/trap handling so that the detailed alarms and traps generated by the device managers are automatically received by OP5 Monitor, prioritized and processed together with all other problems from the rest of your IT environment.
- Specific SNMP polling of important attributes available in the vendor SNMP-MIB proprietary library.
- By using this open model we assure transparency to future enhancements / new releases from various vendors.

## Quality of service analysis

Once the actual system and applications are secured and stable, the need for real time QoS is vital for good quality voice. Quality of service is today provisioned in many different ways. Technologies such as Diffserv, Q-tags, MPLS or simple VLANs are utilized in a broad way and many times in combination.

The main VoIP QoS concerns are:

- Round-Trip Time Delay
- Jitter
- Packet Loss

The way op5 Monitor extracts necessary QoS data vary depending on your choice of QoS technology and vendor. As a generic example: if you are using Cisco as router vendor we add to the default ICMP Echo Reply or equivalent TCP check the proprietary Cisco SAA-MIB data.

(For details please see <http://www.cisco.com/warp/public/126/saa.html>). This feature is included in all IOS from v. 12.0 (5)T and higher.

## Summary

op5 Monitor is a perfect platform to monitor a Voice over Packet system as it includes and combines network, application and traffic data in to a single system giving an overview and visualizing potential threats that impact the overall functionality.

op5 utilizes a set of standard technologies such as SNMP, OS clients and vendor specific data to extract and combine a user-friendly central web based [monitoring solution](#) with built in prioritization and notifications via **email** and SMS to alarm the correct resources wherever and whenever there is a potential problem.

op5 Monitor is [built on Open Source](#) and always delivers full source code so that our customers fully can appreciate and modify it to their specific needs today and in the future.

For further information please contact us on +46-8-23 02 25 or [info@op5.com](mailto:info@op5.com), [www.op5.com](http://www.op5.com)